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WEST AMERICAN EULIMIDÆ.

BY EDWARD G. VANATTA.

Eulima lowei n. sp. Pl. XI, figs. 9, 10.

Shell small, smooth, shining, white, one or two median whorls pink tinted from the animal dried within, opaque, spire bending forward, the outline nearly straight in front, convex behind. In the face view the shell appears straight. Apex decollated and small. Suture impressed, slightly ascending toward the aperture. Ten whorls remaining, the last four each having an impressed varix near the right side. Whorls of the spire a little convex, body whorl slightly and very obtusely angular at the periphery, rather flattened above and below this angulation, base sloping, slightly convex. Aperture trapezoidal-ovate, outer lip thickened, sharp, reversed sigmoid in profile, inner lip angular at the junction of the columella and parietal wall. Columella heavy, concave; parietal wall with a thin callus, convex.

Alt. 6 85, diam. 2.66, length of aperture 2.09, breadth of aperture 1.33 mm.

Long Beach, California. Mr. H. N. Lowe.

Type in the collection of the Academy of Natural Sciences, No 57,262

A compact species resembling *E. bistorta*, but differs in being bent forward only, not laterally distorted also, in having four varices instead of three and in the stouter, more conic form. It differs from *E. thersites* Cpr. in having more whorls, and being bent forward and not toward the right.

Eulima bistorta n. sp. Pl. XI, figs. 7, 8.

Shell small, smooth, shining, opaque, bluish white, apex yellow tinted, spire bending forward and toward the right, the outline nearly straight on the right side, convex on the left, front outline nearly straight, rear outline convex. Apex decollated, small. Suture impressed, slightly ascending toward the aperture. About nine and one-half whorls remaining, of which each of the last three has an impressed varix, thickened behind, on the right side.

Whorls of the spire convex, the body whorl is rather cylindrical and much bent to the right and forward, giving the penultimate whorl a swollen appearance. Aperture irregularly oval, outer lip sharp, thickened, bow shaped in profile, columella and parietal walls forming a concave arch, parietal callus nearly straight, thin.

Alt. 5.9, diam. 2.16, length of aperture 1.9, breadth of apert. 1.2 mm.

Monterey, California, "on a starfish."

Type in the collection of the Academy of Natural Sciences, No. 65,881.

This species differs from *E. thersites* Cpr.,¹ of which I have not seen a specimen, in being narrower, having more whorls, a longer body whorl, and in having varices. It differs from *E. lowei* n. sp. in having three instead of four varices, and in being bent forward and also to the right and in having a more cylindrical body whorl.

Eulima compacta Cpr. Pl. XI, figs, 11, 12.

Shell small, stout, smooth, shining, pinkish white, opaque, the outline of the spire straight, conical. Apex decollated, of moderate diameter. Sutures linear, not ascending toward the aperture. About six and one-half whorls remaining, whorls of the spire flat, the body whorl oval. No varices. Aperture ovate, outer lip sharp, not thickened, in profile it is nearly straight to the periphery, then bent backward. Columella rounded, slightly concave, parietal wall a little convex, forming a slight obtuse angle with the columella, parietal callus moderate.

Alt. 6.7, diam. 2.45, length of aperture 2.27, breadth 1.27 mm.

Pt. Abreogos, Lower California (H. Hemphill!).

The specimen figured is in the collection of the Academy of Natural Sciences, No. 57,263.

This species may be easily distinguished by its stout, straight,

¹ Carpenter's diagnosis of this species is (translated) as follows: "Shell small, very short, whitish, arcuate, very much distorted, right margin of the spire nearly straight, left strongly excurved; nuclear whorls decollated, whorls remaining 6, smooth, nearly flat, the suture distinct, base strongly arched, aperture suboval, produced toward the right, peritreme continuous, heavily calloused, lip sinuous.

"Long .21, long spir. .13, lat. .09 [= 5 25, 3.25, 2.25 mm.], div. 40°. Sta. Barbara (Jewett). Preëminent for aberration among the distorted Eulimidae." Ann. Mag. Nat. Hist., 3d Ser., xv, 1865, p. 396.

conical form, and the simple curvature of the outer lip.² The specimen figured, from Lower California, seems to fulfil the requirements of Carpenter's too brief description.

Eulima randolphi n. sp. Pl. XI, figs. 13, 14.

Shell smooth, rather slender, shining, bluish white when empty, but when the animal is dried in, the spire is orange colored above, pink in the middle with sometimes a slight yellowish band on the body whorl; opaque; outlines of the spire straight, conical. Apex blunt, rounded, of moderate size, suture impressed; no varices. Seven or eight whorls, the body whorl ovate, whorls of the spire a little convex. Aperture ovate, outer lip sloping to the right, nearly straight, in profile it is moderately arched forward below and sometimes retracted very slightly above. Columella slender, concave below, convex above, forming an angle with the convex parietal wall, parietal callus very thin.

Alt. 6, diam. 2.3, length of aperture 2.1, breadth 1.1, diam. of apex .3 mm.

Unalaska, Alaska, under stones, P. B. Randolph.

The type is in the collection of the Academy of Natural Sciences, No. 73,729.

This is the species mentioned by Mr. Randolph in the *Nautilus* for February, 1899, p. 112, as being very plentiful under stones. It is a rather slender species distinguished from *E. micans* Cpr. by its smaller size, more impressed sutures, straighter profile of the outer lip and the blunter apex. It is distinguished from *E. rutila* by its blunter apex, fewer whorls, stouter form, in being opaque and having the sutures more impressed. It also lacks any trace of varices.

Eulima micans "Cpr." Reeve. Pl. XI, figs. 1, 2.

E. micans Cpr., Reeve, Conch. Icon., Vol. xv; *Eulima*, pl. iv, sp. 33 (Dec., 1865).

This is the largest California species of *Eulima*. It is generally of a bluish white color below and lead colored above. The apex is often orange tinted, is quite sharp and seldom decollated.

² Carpenter has described "*Eulima* (? var.) *compacta* from San Pedro as similar to young *E. micans* but much less terete, margins of the spire little excurved, apex lost, seven whorls remaining, base and aperture elongated, the lip little sinuated. It measures .25 × .09 inch [= 6.25 × 2.25 mm.], with the spire .15 long [= 3.75 mm.]. The divergence 22°." Proc. Cal. Acad. Nat. Sci., Vol. iii, 1866.

The sutures are linear. Whorls about thirteen or fourteen. The lip is concave above and convex below. There are several very fine impressed lines indicating former lips, irregular in position either on the right or left side or on both. Reeve's figure being small and poor, I have given a camera drawing of a specimen from San Pedro Bay, No. 72,674 of the Academy's collection. Carpenter reports this species from Puget Sound, Vancouver, Cataline Island, 30-40 fms.; Sta. Barbara and San Diego. The specimen figured measures alt. 11.4, diam. 3.2, length of aperture 3.2, breadth 1.9 mm.

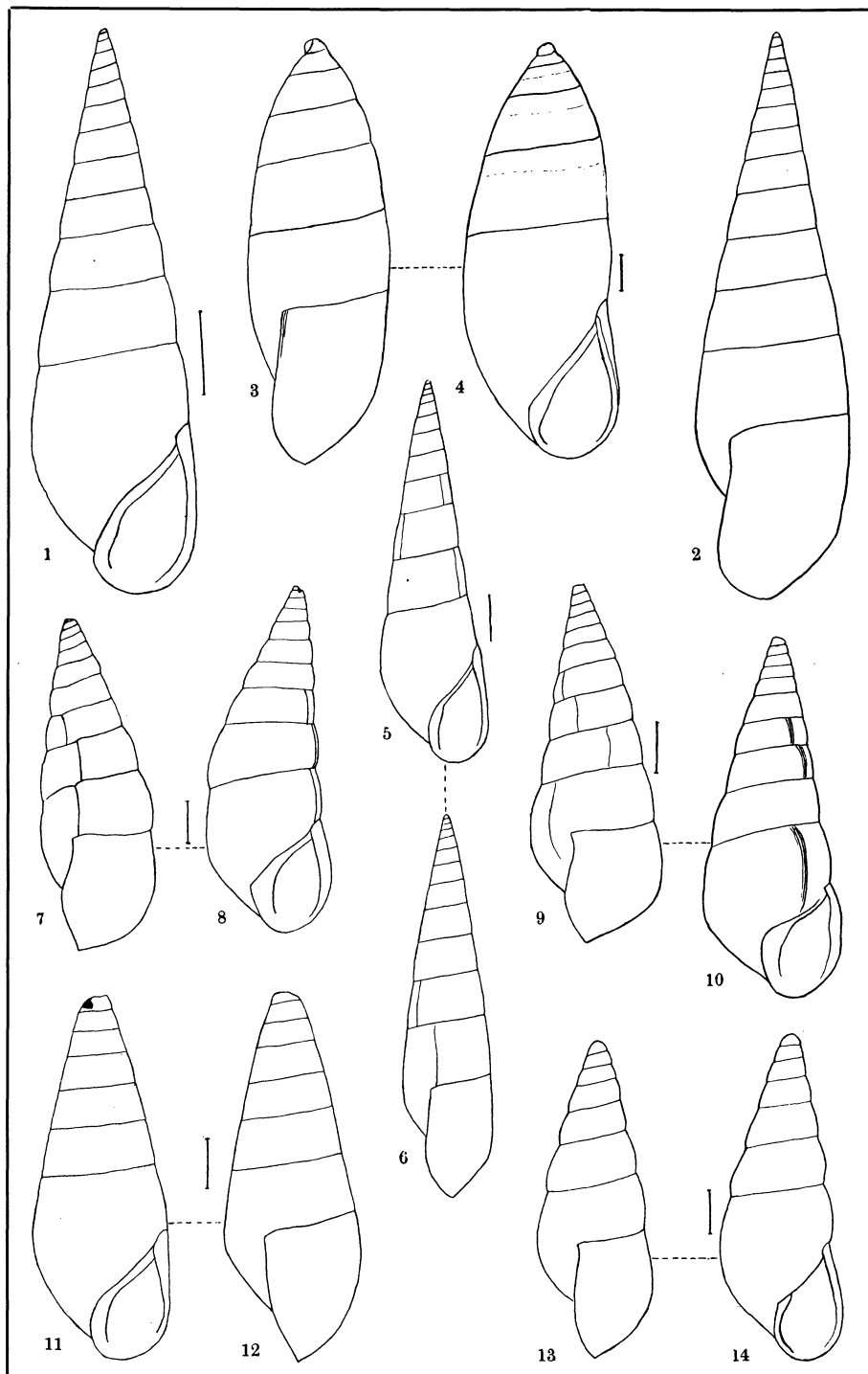
Eulima rutila Cpr. Pl. XI, figs. 5, 6.

Similar to *E. micans*, but smaller, more slender and with five very fine varices, three on the right and two on the left side. The specimen figured is from San Diego, No. 57,264 of the collection of the Academy of Natural Sciences, and measures alt. 6.41, diam. 1.83, length of aperture 1.91, breadth .83 mm. The Academy has also one tray of this species from Scammon's Lagoon, Lower California.

Carpenter thus describes *Eulima* (? var.) *rutila* Cpr.: "Shell similar to young *E. micans*, but more terete, highly polished, rosy and livid tinted, nuclear whorls as in *E. micans*; following whorls 10, elongate, very slender, base and aperture greatly prolonged; columella more twisted; lip very sinuous, a callus running backward above the suture, lip narrow.

"Long. 26, long spir .19, lat .07 [= 6.5, 4.75, 1.75 mm.], div. 20°.

"Monterey (Cooper) (*Proc. Cal. Acad. Nat. Sci.*, 1866, p. 221)."



VANATTA ON EULIMIDÆ.